



2019 Astrophysics Medium Explorer (SMEX) and Mission of Opportunity (MO) Preproposal Conference

Overview of the Evaluation, Categorization, and Selection Process

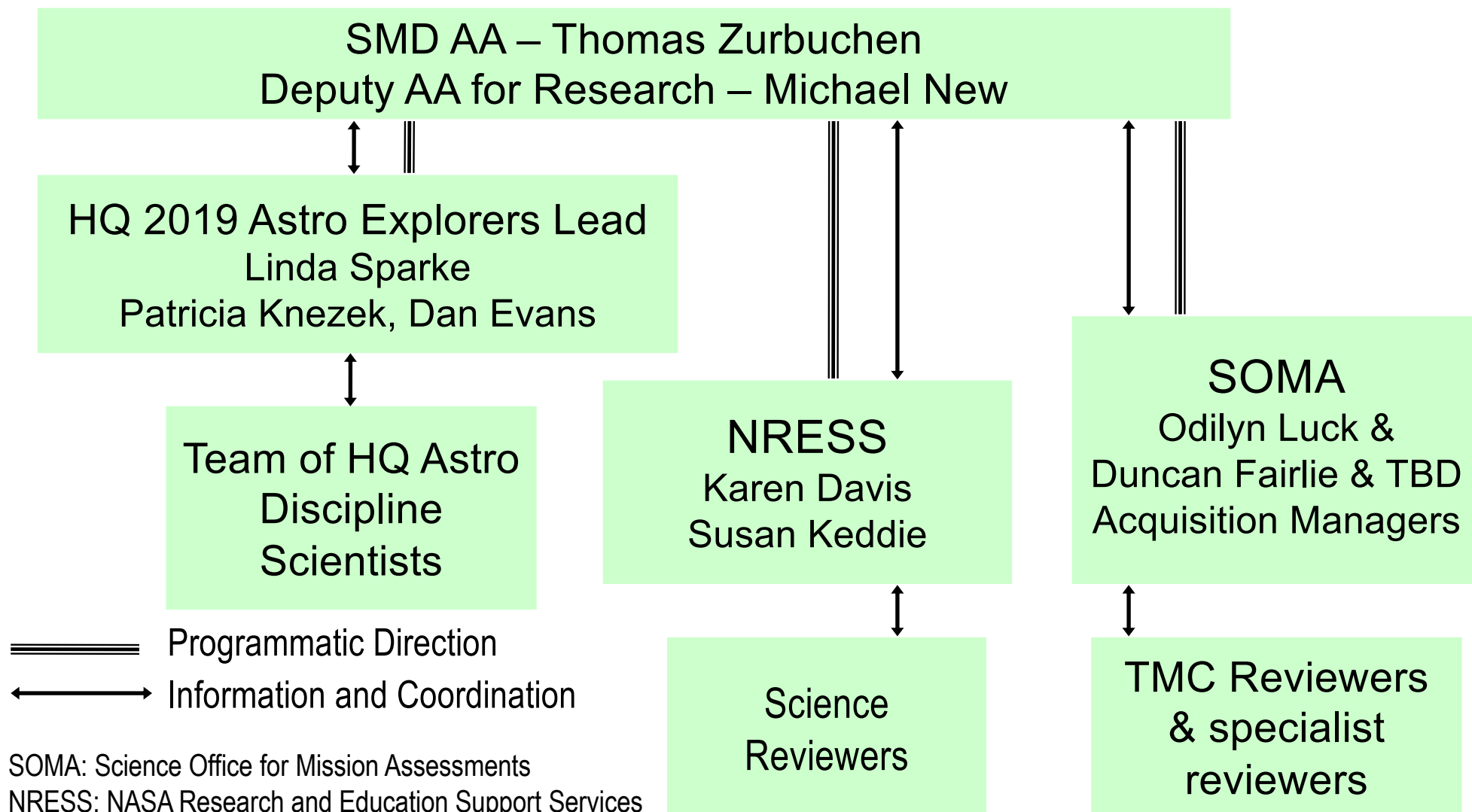
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NASA Headquarters
May 2, 2019



Evaluation, Categorization, and Selection Process

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2019 Astrophysics Explorers Team





Science Office for Mission Assessments (SOMA)

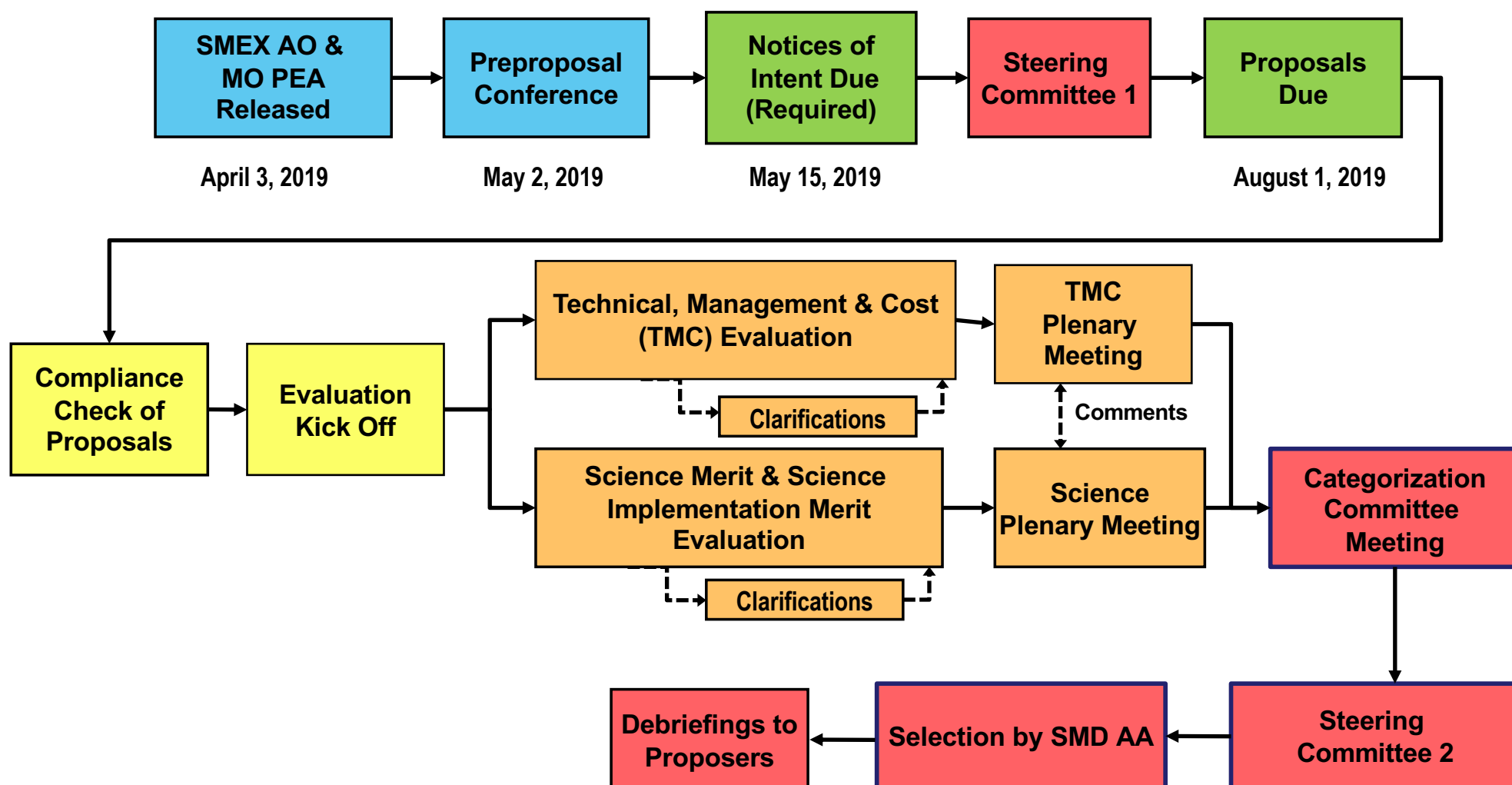
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- The NASA Science Mission Directorate (SMD) **Science Office for Mission Assessments (SOMA)** was established in 1996 to support the Discovery and Explorer Programs. The office now supports also the New Frontiers, Mars Scout, Earth System Science Pathfinder, and others.
- The Technical, Management and Cost process is a standard process used by SOMA to support all SMD evaluations. Lessons learned from each evaluation are incorporated into the process for continuous improvement.



Proposal Evaluation Flow

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Two-Step Competitive Process

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2019 SMEX and MO investigations will be evaluated and selected through a two-step competitive process.

- Step 1 is the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO.
- As the outcome of Step 1, NASA intends to fund approximately two or three Step-1 SMEX proposals and two or three MO proposals to proceed to a 9-month Phase A concept study and submit Concept Study Reports to NASA.
- Step 2 is the preparation of the Concept Study Reports, their submission and evaluation, followed by a continuation decision (downselection).
- As the outcome of Step 2, NASA intends to select one SMEX investigation and one or more MO investigations to proceed into Phase B and subsequent mission phases.



Requirements Deferred to Step 2

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The following proposal requirements have been deferred until Step 2: references are for SMEX AO; Section 8.2 summarizes most for MO PEA.

- Detailed disposal plan (SMEX AO Section 5.2.7)
- Science Enhancement Option or its cost (Section 5.1.5)
- Independent Verification and Validation of Software (Section 4.6.1)
- Costing of Conjunction Assessment Risk Analysis (Section 4.6.4)
- Schedule-based end-to-end data management plan (Requirement B-23 of SMEX AO; an amendment addressing MO PEA O-1 is forthcoming)
- Requirements for real year dollar costs (Section 5.6.2, Requirement B-13, Requirement B-51, and Requirement B-52)
- Space Systems Protection (see Section 5.2.5.1; Section 5.3.7 of MO PEA)

Details on each deferral are provided in the applicable section(s).

Many of the deferred requirements include budgeting for related activities, so **proposing at the AO Cost Cap is strongly discouraged**, unless associated costs have been included in the proposed PI-Managed Mission Cost and/or Total Mission Cost (see AO Section 4.3.1 and Section 4.3.2).



Evaluation: Panel Review

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- All proposals will be screened initially to determine their compliance to requirements and constraints of the applicable AO.
- Proposals that do not comply may be declared noncompliant and returned to the proposer without further review. A submission compliance checklist is provided in the 2019 SMEX AO and the SALMON-3 AO.
- Compliant proposals will be evaluated against the criteria specified in Section 7.2 of the SMEX and SALMON-3 AO, and Section 7.1 of the MO PEA, by panels of individuals who are peers of the proposers.
- SMEX and MO Proposals will be evaluated by a science panel and a technical/management/cost panel; the panels evaluate proposals against different criteria.
- Panel members will be instructed to evaluate every proposal independently without comparison to other proposals.
- These panels may be augmented through the solicitation of non-panel ('mail-in') reviews, which the panels have the right to accept in whole or in part, or to reject.



Clarification Process

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- Before finalizing the evaluation, NASA will request clarification on all potential major weaknesses in the science merit, science implementation merit, and TMC feasibility of mission implementation that were identified in the proposal.
- Proposers will receive communication in advance of the clarification round(s) with notification of the schedule, requirements, and limitations. Clarifications from the science panel may be sent separately from those from TMC.
- On the day of the clarification round, proposers will receive a second communication with the potential major weaknesses and instructions for responding. Proposers will have at least 24 hours to respond.
- To prevent proposal teams from improving their proposal, thereby requiring NASA to allow all proposal teams to improve their proposals, the clarification is highly constrained to fit one of the following 5 formats.
- Responses that go beyond the permitted response format will be deleted and will not be provided to the evaluation panels.



Clarification Responses (1)

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Response Type 1: You may identify a place in your proposal where information relevant to the potential major weakness may be found.

- You may identify the location by Section number, page number, paragraph number, line number, Table number, Figure number, or any other pointer. You may not provide any other feedback other than a pointer to one or more specific locations in your proposal. You may not provide a sentence or a paragraph of explanation as to why you think these places in the proposal address the potential major weakness. Any such explanation could be considered an improvement to the proposal and will be deleted.



Clarification Responses (2)

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Response Type 2: You may confirm that the potential major weakness is not addressed in your proposal.

- You may not provide a sentence or a paragraph of explanation as to why you think this is okay or why the potential major weakness is invalid. Any such explanation could be considered an improvement to the proposal and will be deleted.



Clarification Responses (3)

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Response Type 3: You may state that the potential major weakness is invalidated by information that is common knowledge or state-of-the-art and is therefore not included in the proposal.

- You may suggest a commonly known topic that the evaluators should be familiar with in order to properly evaluate this aspect of your proposal. Topic titles must be limited to a few words (subject title only, no explanations) so that evaluators may, on their own, consult the public literature for information and references that are not contained in your proposal.
- A “topic title” that, when searched, points to sources that may have been updated since the proposal was submitted, is not allowed.
- **No more than one** response of Type 3 may be given for any numbered sentence of a potential major weakness.



Clarification Responses (4)

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Response Type 4: You may state that a numerical calculation carried out by the evaluation team, and included or referenced in the potential major weakness is incorrect.

- You may identify the location of data relevant to the numerical calculation by Section number, page number, paragraph number, line number, Table number, Figure number, or any other pointer. You may not provide any other feedback other than a pointer to one or more specific locations in your proposal.



Clarification Responses (5)

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Response Type 5: You may state that a typographical error appears in the proposal and that the correct data are available elsewhere inside the proposal.

- You must indicate that the evaluation team may find the correct datum in the proposal: follow the instructions for Response Type 1. You may not provide the corrected datum in your response. Any such corrected data could be considered an improvement to the proposal, which is not permitted.

Requirement B-1: A proposal shall ... contain all data and other information that will be necessary for scientific and technical evaluations; provision by reference to external sources, such as Internet websites, of additional material that is required for evaluation of the proposal is prohibited.



Categorization (1)

Upon completion of the evaluations, the results will be presented to the Categorization Committee, an *ad hoc* subcommittee of the SMD AO Steering Committee composed solely of Civil Servants and appointed by the SMD Associate Administrator.

This committee will consider the peer review results and, based on the evaluations, will categorize each proposal according to procedures required by NFS 1872.403-1(e). The categories are defined as:

- Category I. Well-conceived, meritorious, and feasible investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and that data can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.



Categorization (2)

- Category II. Well-conceived, meritorious, and feasible investigations that are recommended for acceptance, but at a lower priority than Category I, whatever the reason.
- Category III. Meritorious investigations that require further development. Category III investigations may be funded for further development and may be reconsidered at a later time for the same or other opportunities.
- Category IV. Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.



After Categorization

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Steering Committee

- The AO Steering Committee will conduct an independent assessment of the Evaluation and Categorization processes regarding their compliance to established policies and practices, as well as the completeness, self-consistency, and adequacy of all supporting materials.

Accommodation Study for Rideshare Payloads

- After the evaluation, but prior to the selection decision, NASA will perform an accommodation study of selectable rideshare investigation proposals to assess the extent to which the proposed investigation is compatible with the expected rideshare opportunities. A proposed investigation with a high probability of being compatible with several platforms is more likely to be selected than one with less flexible accommodation and orbit requirements.



Selection by SMD Associate Administrator

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- The evaluation results will be presented to the Associate Administrator for the Science Mission Directorate, who will make the final selections. As the Selection Official, s/he may consult with senior members of SMD and the Agency concerning the selections.
- The Selection Official may take into account a wide range of programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the mission directorate(s).
- As part of the selection decision, a decision will be made as to whether or not any Category III proposals will receive funding for technology development.



Post-Selection Debriefings

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- Proposers of investigations will be notified in writing and offered oral debriefings for themselves and representatives from each of their main partners.
- Written debriefing materials will be provided ahead of the time of the oral debriefing. Such debriefings may be in person at NASA Headquarters or by telephone if the proposal PI prefers.



Where to Find Information

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Explorer Acquisition Home Page

The 2019 Astrophysics Explorers Acquisition Homepage, available at <http://explorers.larc.nasa.gov/2019APSMEX/>, will provide updates and any AO addenda during the Explorer AO solicitation process. It provides links to the Program Library, a list of potential teaming partners, and questions and answers regarding the AO.

Program Library

The Explorer Program Library provides additional regulations, policies, and background information on the Explorer Program. The Program Library is accessible at:

<http://explorers.larc.nasa.gov/2019APSMEX/SMEX/programlibrary.html>,
or

<http://explorers.larc.nasa.gov/2019APSMEX/MO/programlibrary.html>